Remarks

Claims 11-20 were previously pending. The Applicants have amended Claims 11 and 19, support for which may be found at least in paragraphs [0017], [0019], and [0036] of the originally-filed Substitute Specification. Thus, the amendments do not introduce any new matter. No claims have been cancelled or added. Thus, Claims 11-20 remain pending.

Claim 11 stands objected to due to a minor typographical error. The Applicants have deleted the phrase "comprises the replace part" and now recite that the complementary information is comprised of "the replaced information segments of the original encoded audiovisual stream." Accordingly, withdrawal of the claim objection is respectfully requested.

The Applicants acknowledge the provisional rejection of Claim 11 based on obviousness-type double patenting over co-pending Application Nos. 11/344,897, 11/387,284 and 11/264,953, all in view of White. The Applicants respectfully submit that Claim 11 is patentable over each co-pending application in view of White for the reasons described below. Accordingly, withdrawal of the obviousness-type double patenting rejections is respectfully requested.

White teaches a technique to multicast a complete content. In the case of movie content, White identifies the entities to be duplicated (referred to as illuminated parts), i.e., the video frame, and then applies the encryption to these illuminated sessions. (*See* for example Column 6, lines 16-20 of White: "... to provide a plurality of double parts or so-called double illuminated parts for the movie. In one embodiment, if the movie is compressed, e.g., under the MPEG standard, I-frames or similar parts are double illuminated to keep bandwidth low.")

With respect to co-pending Application No. 11/344,897, applying White to the complementary stream in Application No. 11/344,897, which itself is not at all a complete content as each frame is only represented with several syntax elements (paragraph [0010]: "...preserved in a secure server this complementary information containing a part of the original audiovisual stream,..."), White does not support the flexible segmentation to create the encrypted block as in the pending claims. Exploiting the small quantity of extracted information from each frame in the complementary stream, the encrypted block can now go further than the limit of a frame (paragraph [0035]: "..., which generates data segments of variable size with each segment corresponding to an entire, subjectively coherent audiovisual element such as an image or a frame, a group of images or GOP ("Group Of Picture") in an MPEG-2 stream for

example."). Therefore, according to the pending claims, the multicast saves more bandwidth than the one in the combination of White and the copending Application No 11/344,897.

The encrypted stream created by White has the same syntax as the origin with some duplicated and encrypted double-illuminated sessions. (*See* for example Column 8, lines 20-22 of White: "The encrypted content is "double-illuminated" to refer that at least portions thereof are duplicated and watermarked with different identifiers.") Even if applied to the complementary stream of the co-pending Application 11/344,897, it does not support the feature of in-band transmission recited in Claim 11. On the contrary, the pending claims encapsulate the encrypted blocks into the UFIC units, which contain the related digital rights management data in their header. Because of these headers, an explicit link is created between the encrypted data and its targeted user (paragraph [0036]: "... a block containing a segment to which access information or "header" was added comprising data relative to the identity of the user in the case of a classic centralized network. The header preferably comprises data relative to the mobility of the user (position, rights, network access points, for example) in the case of a distributed network."). Furthermore, exploiting the structure of UFIC packet, the packetizing phase of the transport layer during the transmission may be processed in a uniform manner for different types of data (paragraph [0036]: "a block is the fundamental unit of communication and is also called UFIC").

With the technique by White, the user's identification from the encrypted content may be deduced via watermarking. Note that watermarking technique is only well-known for the audiovisual streams. While applied to the complementary stream in Application 11/344,897 (a binary stream, containing some syntax elements of the compressed audiovisual stream), watermarking for such type of stream is not evident. The advantage of direct association between encrypted data with user, due to the structure of UFIC packets, is that even in the application layer, after decryption, services related to user management are still available, independent from the lower layers (packet routing, key extraction, and the like).

The combined scheme of White and the co-pending Application 11/344,897 also leads to some redundancies due to the unexploited nature of the complementary stream. When trying to apply the technique by White to the complementary stream in Application 11/344,897, the skilled person could partially encrypt the stream (Claim 1: "encrypting a copy of at least one part of the content...") with a plurality of unique keys, one key for each duplication of a frame

(White, Column 9, lines 40-41: "At the operation 604, the selected watermarked frames and remaining frames are encrypted with unique keys"). The combinations of keys which is unique to each user are then sent to the user (White, Column 10, lines 42-45: "This concept relies on the fact that no customer is given all of the keys required for an item of content, but is given a unique combination of keys just sufficient to decrypt the content to a viewable state").

In contrast, in the multicast according to the pending claims, the stream is encrypted entirely with only one unique key for each user (Paragraph [0037]: "the stream segmented in module 41 is sent via link 43 to module 42, compressed and encrypted in this module 42 by said unique session key by heading and by client"). The unique key for each user can be modified a long the time in the case of prolonging the session (paragraph [0043]: "After a period that is sufficiently long to have the right to request a new key an in the instance in which the client desired to continue receiving the complementary information of the same multicasting group, a new authentication stage recommences."). But within one session, one user possesses one key exclusively (Paragraph [0023]: "... - Each session key is individual for each client and has its own lifetime,...").

With respect to co-pending Application No. 11/387,284, similar to the reasons discussed above, the technique of multicasting taught by White applied to the co-pending Application 11/387,284 does not support the flexible segmentation as well as the packetizing UFIC. Therefore, this combination fails to disclose the multicasting technique in Claim 11.

With respect to co-pending Application No. 11/264,953, similar to the reasons discussed above, the technique of multicasting taught by White applied to the co-pending Application 11/264,953 does not support the flexible segmentation as well as the packetizing UFIC. Therefore, this combination fails to disclose the multicasting technique recited in Claim 11.

Claims 11, 15, 18, 19, and 20 stand rejected under 35 USC §103(a) as being unpatentable over Dawson in view of White; Claims 12-14 and 16 over Dawson in view of White and in further view of Krajewski; and Claim 17 over Dawson in view of White and in further view of Farnham. The Applicants respectfully request reconsideration and withdrawal of the 35 USC §103(a) rejections based on the reasons set forth below.

Independent Claim 11 recites "a process for secure distribution of digital audiovisual streams." The process according to Claim 11 includes "separating an original encoded audiovisual stream into two parts." A modified main stream is generated to have "a format of

the original encoded audiovisual stream," while complementary information has "any format comprising digital information suitable to permit reconstruction of the original encoded audiovisual stream." The modified main streams is generated "by deleting and replacing, directly on a compressed bitstream domain, information segments of the original encoded audiovisual stream." The complementary information is "the replaced information segments of the original encoded audiovisual stream." The modified main stream and the complementary information are transmitted via separate paths to addressee equipment. The modified main stream is transmitted in a broadcasting mode, while the complementary information is transmitted "in an extended secure multicasting mode," which "enables in-band transmission of information relative to digital rights managements."

The deleting and replacing operations recited in Claim 11 are exclusively applied to the elements of the compressed bitstream, leading to visual artifacts on the uncompressed domain. However, these distortions are not necessarily constrained to some pixel-blocks of a certain frame but rather may spread over a full frame or a group of frames (especially if the removed elements of the compressed bitstream are the global parameters of the underlying compression technique). Individually, the removed elements of the compressed bitstream cannot by themselves produce a visually meaningful content. They must be inserted back to the compressed bitstream, then be processed integrally with other elements to create a unique content having a discernible meaning. Therefore, it is not possible to separately create two image-portions from the modified compressed bitstream and the removed elements of that compressed bitstream such that the two portions will be overlaid over each other to reconstruct the original content.

In sharp contrast to Claim 11, Dawson performs the extracting and replacing on the uncompressed/raw domain. (*See* the last paragraph in Column 4 of Dawson: "The components 105a of the program stream 105 from which video images are derived that may be presented in the video image memory plane (e.g., 303 FIG. 3) may be extracted from a video signal (e.g., 201 FIG. 2) and replaced with marred content.") As well known in the art, the information in the video image memory plane is the buffered data just before being rendered visually on the screen/monitor; therefore, they are decoded/uncompressed information. Similarly, but in contrast to Claim 11, the recomposition is an overlay of two independent uncompressed/raw blocks of images frames. (*See* the first paragraph in Column 5 of Dawson: "As a result,

composite images that include image portions that may be attributable to both the graphics overlay and the video image memory plane may be seamlessly presented on the display 107.")

White is relied upon for teaching that the complementary information is secured and personalized for each client, as recited in Claim 11. (*See* Page 14 of the Office Action of March 4, 2009.) However, White, which is directed to utilizing watermarks to protect distributed content, does not remedy the deficiencies noted above with respect to Dawson.

In summary, the method according to Claim 11 uniquely generates a modified main stream and complementary information of an original encoded audiovisual stream for the secure distribution of the stream. Moreover, the complementary information is sent "in an extended, secure multicasting mode" that "enables in-band transmission of information," and the modified main stream is sent in a broadcasting mode. Neither Dawson nor White disclose the deleting and replacing of domain information segments directly on a compressed bitstream, nor does either reference disclose the use of broadcasting mode for the modified main stream and multicasting mode for the complementary information.

The Applicants respectfully submit that the above differences set forth with respect to Dawson and White are such that any theoretical combination of Dawson and White fails to result in a method that contains each and every claimed aspect of the subject matter recited in independent Claim 11 and its dependent claims. Additionally, independent Claim 19 recites features similar to Claim 11 and is thus patentable over Dawson and White for the same reasons as described above with respect to Claim 11. Thus, withdrawal of the §103(a) rejection of Claims 11, 15, 18, 19, and 20 is respectfully requested.

Dependent Claims 12-14 and 16-17 are patentable at least for being dependent upon Claim 11, shown above to be patentable over any combination of Dawson and White.

Moreover, neither Krajewski nor Farnham teach at least the following features of Claim 11: generating a modified main stream and complementary information of an original encoded audiovisual stream for the secure distribution of the stream; deleting and replacing domain information segments directly on a compressed bitstream; transmitting the complementary information "in an extended, secure multicasting mode" that "enables in-band transmission of information;" and transmitting the modified main stream in a broadcasting mode. Therefore, as neither Krajewski nor Farnham remedy the deficiencies noted above with respect to Dawson and White, the combination of Dawson and White with Krajewski and/or Farnham fails to result in

the features of dependent Claims 12-14 and 16-17. Thus, withdrawal of the §103(a) rejection of Claims 12-14 and 16-17 is respectfully requested.

In light of the foregoing, the Applicants respectfully submit that the entire Application is now in condition for allowance, which is respectfully requested.

Respectfully submitted,

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